North Madison
7310 Patton Rd

Huiskamp
5484 Blue Bill Park Dr

Line Upgrade from Huiskamp to Blount St. Power Plant to 138 kV
In-Service 2010

APPENDIX C - EXHIBIT C-1
EMF ROUTE SEGMENTS - PROPOSED ROUTES
NORTH MADISON - WAUNAKEE NEW 138kV LINE

AMERICAN TRANSMISSION COMPANY®
THE ENERGY ACCESS COMPANY

Preferred Route
Alternate Route
Segment Identifier
Segment Node
Previously Studied Segments

Existing Transmission Lines

69 kV	138 kV	345 kV
Single Circuit	Single Circuit	Single Circuit
Double Circuit	Double Circuit	Double Circuit

Transmission Sites
- Joint Owned Substation Assets Conveyed to ATC
- Municipal or Distribution
- ATC Owned Substation
- Joint Owned Substation Assets Retained by LDC

1 0.5 0 1
Miles

Base Map Data Sources: ATC, WDNR, PSCW, Dane County LIO.
The information presented in this map document is advisory and is intended for reference purposes only. American Transmission Company owned and operated facility locations are approximate.

G:\WORKSPACE\Projects\North Madison to Waunakee New 138kV\EMF_Proposed_Routes.mxd Modified: November 8, 2005

Appendix C - Exhibit C2 North Madison to Huiskamp New 138 kV Transmission Line EMF Cross-Reference Table		
Line Segment	Figure Number	Table Number
1	1	1
56	2	2
47	3	3
49	4	4
58	5	5
9	6	6
14	7	7
26	7	8
32	8	9
61	9	10
35a	10	11
35b	10	12
36	11	13
2a	12	14
2b	13	15
3	14	16
43a-1	14	17
43a-2	15	18
43a-3	16	19
45	17	20
8b-1	18	21
8b-2	19	22
13a	20	23
13b	21	24
24	22	25
27, 31 & 34	23	26
1	26	27
27, 31, 34 & 36	27	28

TABLE 1
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 1**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	43.12	56.98	97.28	121.70
25	26.50	35.46	61.32	76.75
50	10.08	13.58	23.65	29.61
100	2.60	3.53	6.21	7.78
150	1.15	1.57	2.77	3.46
200	0.67	0.92	1.62	2.03
300	0.34	0.47	0.83	1.04

Revised 2-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 1 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 2
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 56**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	17.33	22.32	37.00	46.23
25	13.97	17.98	29.82	37.25
50	7.94	10.22	16.94	21.16
100	2.88	3.71	6.14	7.67
150	1.41	1.80	2.99	3.73
200	0.82	1.06	1.75	2.18
300	0.38	0.49	0.81	1.01

Revised 2-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 2 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 3
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 47**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	15.55	20.10	33.96	42.42
25	13.11	16.93	28.41	35.49
50	7.60	9.81	16.40	20.49
100	2.71	3.50	5.85	7.31
150	1.29	1.66	2.78	3.47
200	0.74	0.95	1.59	1.99
300	0.33	0.42	0.71	0.88

Revised 2-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 3 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 4
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 49**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	19.58	25.15	40.70	50.86
25	15.60	20.04	32.49	40.60
50	8.60	11.05	18.04	22.55
100	3.00	3.86	6.33	7.91
150	1.42	1.83	3.00	3.75
200	0.82	1.05	1.72	2.15
300	0.37	0.47	0.77	0.97

Revised 2-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 4 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 5
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 58**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	18.65	23.98	39.81	49.78
25	14.64	18.84	31.23	39.04
50	8.23	10.59	17.56	21.94
100	2.92	3.75	6.23	7.78
150	1.39	1.79	2.97	3.70
200	0.80	1.02	1.70	2.12
300	0.36	0.46	0.76	0.95

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 5 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 6
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 9**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	17.30	22.28	36.94	46.15
25	13.81	17.79	29.49	36.84
50	7.48	10.09	16.74	20.91
100	2.83	3.64	6.03	7.54
150	1.36	1.76	2.91	3.64
200	0.79	1.02	1.69	2.11
300	0.36	0.46	0.76	0.95

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 6 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 7
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 14**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	18.23	23.45	38.79	48.44
25	14.56	18.74	31.04	38.76
50	8.19	10.54	17.47	21.82
100	2.89	3.72	6.18	7.72
150	1.37	1.77	2.94	3.67
200	0.79	1.01	1.68	2.10
300	0.35	0.45	0.75	0.94

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 7 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 8
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 26**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	18.07	23.28	38.57	47.80
25	14.39	18.54	30.72	38.20
50	8.09	10.43	17.28	21.51
100	2.87	3.70	6.13	7.62
150	1.37	1.76	2.92	3.62
200	0.78	1.01	1.67	2.07
300	0.35	0.45	0.75	0.92

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 7 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 9
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 32**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	42.22	54.35	90.11	112.58
25	26.44	34.04	56.43	70.50
50	11.42	14.70	24.38	30.46
100	3.51	4.51	7.48	9.35
150	1.67	2.15	3.56	4.45
200	0.99	1.27	2.11	2.63
300	0.48	0.62	1.04	1.29

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 8 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 10
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 61**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	17.08	22.02	36.60	45.71
25	13.70	17.68	29.41	36.73
50	7.77	10.03	16.68	20.83
100	2.81	3.62	6.02	7.51
150	1.36	1.75	2.91	3.64
200	0.79	1.02	1.69	2.11
300	0.36	0.47	0.77	0.97

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Explanatory Notes:

4. See Exhibit C1 and Figure 9 for segment location, configuration of circuits in this segment and line loadings.

5. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

6. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 11
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 35a**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	16.32	21.05	35.61	44.51
25	13.10	16.86	28.21	35.28
50	7.43	9.57	15.98	19.99
100	2.65	3.41	5.69	7.12
150	1.26	1.62	2.71	3.39
200	0.72	0.93	1.55	1.94
300	0.32	0.41	0.68	0.86

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 10 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 12
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 35b**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	15.51	19.99	34.46	45.98
25	12.81	16.49	27.83	36.29
50	7.28	9.37	15.80	20.42
100	2.59	3.33	5.63	7.25
150	1.24	1.59	2.68	3.46
200	0.71	0.92	1.54	1.99
300	0.32	0.41	0.68	0.89

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 10 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 13
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 36**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	11.52	14.70	24.96	32.17
25	8.08	11.05	21.54	27.73
50	3.90	5.61	12.06	15.49
100	1.09	1.67	4.05	5.19
150	0.44	0.71	1.84	2.36
200	0.23	0.37	1.02	1.31
300	0.09	0.15	0.43	0.56

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Explanatory Notes:

1. See Exhibit C1 and Figure 11 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 14 North Madison - Huiskamp138 kV Line Calculated Magnetic Field Levels				
Distance from Centerline (feet)	**Segment 2a**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	42.25	54.40	90.19	112.67
25	26.47	34.07	56.49	70.58
50	11.44	14.72	24.41	30.50
100	3.51	4.52	7.50	9.37
150	1.67	2.15	3.57	4.46
200	0.99	1.28	2.12	2.65
300	0.49	0.63	1.04	1.30

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 12 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 15
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 2b**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	31.57	40.13	54.95	68.66
25	20.11	25.63	36.55	45.66
50	10.31	13.16	19.28	24.09
100	3.67	4.69	6.72	8.40
150	1.80	2.30	3.18	3.97
200	1.06	1.36	1.81	2.26
300	0.50	0.64	0.79	0.98

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 13 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 16
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 3**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	17.64	22.75	37.48	47.35
25	13.82	17.85	29.61	37.27
50	7.67	9.91	16.52	20.75
100	2.64	3.42	5.72	7.20
150	1.21	1.57	2.64	3.34
200	0.67	0.87	1.47	1.86
300	0.27	0.35	0.60	0.77

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 14 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 17
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 43a-1**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	17.93	23.09	38.41	48.01
25	14.20	18.29	30.46	38.09
50	7.94	10.23	17.07	21.35
100	2.78	3.59	6.00	7.51
150	1.31	1.69	2.83	3.55
200	0.74	0.95	1.61	2.01
300	0.32	0.41	0.70	0.88

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 14 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 18
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 43a-2**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	42.22	54.35	90.11	112.58
25	26.44	34.04	56.43	70.50
50	11.42	14.70	24.38	30.46
100	3.51	4.51	7.48	9.35
150	1.67	2.15	3.56	4.45
200	0.99	1.27	2.11	2.63
300	0.48	0.62	1.04	1.29

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 15 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 19
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 43a-3**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	18.09	23.31	38.62	48.28
25	14.39	18.55	30.72	38.41
50	8.08	10.42	17.26	21.59
100	2.86	3.69	6.10	7.64
150	1.36	1.75	2.90	3.63
200	0.78	1.00	1.66	2.08
300	0.34	0.44	0.73	0.92

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 16 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 20
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 45**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	42.22	54.36	90.11	112.58
25	26.44	34.04	56.43	70.50
50	11.42	14.70	24.38	30.46
100	3.51	4.51	7.48	9.35
150	1.67	2.15	3.56	4.45
200	0.99	1.27	2.11	2.63
300	0.48	0.62	1.04	1.29

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 17 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 21
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 8b-1**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	42.22	54.35	90.11	112.58
25	26.44	34.04	56.43	70.50
50	11.42	14.70	24.38	30.46
100	3.51	4.51	7.48	9.35
150	1.67	2.15	3.56	4.45
200	0.99	1.27	2.11	2.63
300	0.48	0.62	1.04	1.29

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 18 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 22
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 8b-2**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	18.60	23.92	39.66	49.54
25	14.82	19.06	31.58	39.47
50	8.35	10.74	17.80	22.24
100	2.97	3.82	6.32	7.90
150	1.42	1.83	3.02	3.78
200	0.82	1.05	1.75	2.18
300	0.38	0.48	0.80	1.00

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 19 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 23
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 13a**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	38.48	48.16	47.24	64.14
25	28.05	35.34	39.87	52.11
50	13.38	16.92	20.21	25.74
100	4.38	5.55	6.68	8.41
150	2.16	2.74	3.17	3.98
200	1.33	1.68	1.85	2.32
300	0.70	0.88	0.88	1.11

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 20 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 24
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segments 13b**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	38.51	48.19	44.75	55.98
25	28.09	35.49	38.63	48.36
50	13.44	17.03	20.06	25.14
100	4.43	5.61	6.72	8.44
150	2.19	2.77	3.21	4.04
200	1.35	1.71	1.88	2.38
300	0.71	0.90	0.91	1.15

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 21 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 25
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segment 24**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	42.22	54.35	90.11	112.58
25	26.44	34.04	56.43	70.50
50	11.42	14.70	24.38	30.46
100	3.51	4.51	7.48	9.35
150	1.67	2.15	3.56	4.45
200	0.99	1.27	2.11	2.63
300	0.48	0.62	1.04	1.29

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 22 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 26
North Madison - Huiskamp138 kV Line
Calculated Magnetic Field Levels

Distance from Centerline (feet)	**Segments 27, 31 & 34**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	29.65	37.33	63.32	79.08
25	14.93	20.76	42.55	53.13
50	5.01	7.43	17.00	21.21
100	1.09	1.76	4.58	5.71
150	0.42	0.71	2.01	2.50
200	0.21	0.37	1.13	1.41
300	0.08	0.16	0.53	0.66

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 23 for segment location, configuration of circuits in this segment and line loadings.

2. “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TABLE 27 North Madison – Huiskamp 138 kV Line Calculated Magnetic Field Levels Existing North Madison to Yarha 138 kV Line				
Distance from Centerline (feet)	**Segment 1**			
	Proposed 138 kV in 2008 (mG)		Proposed 138 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	58.49	77.29		
25	36.02	47.60		
50	15.55	20.54		
100	4.73	6.26		
150	2.21	2.92		
200	1.27	1.68		
300	0.58	0.77		

Revised 02-09-06

Explanatory Notes:

1. See Exhibit C1 and Figure 26 for segment location, configuration of circuits in this segment and line loadings.

2. "Normal Peak Load" is defined as 100% of estimated peak, system normal configuration and "Normal Load" is defined as 80% of estimated peak, system in normal configuration.

3. The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI's ACDCLINE program at a distance of one meter above ground.

TABLE 28 North Madison - Huiskamp138 kV Line Calculated Magnetic Field Levels Existing Waunakee to Huiskamp 69 kV Line				
Distance from Centerline (feet)	**Segments 27, 31, 34 & 36**			
	Proposed 69 kV in 2008 (mG)		Proposed 69 kV in 2018 (mG)	
	Normal Load (327 amps)	Normal Peak Load (421 amps)	Normal Load (698 amps)	Normal Peak Load (872 amps)
0	51.06	58.86		
25	26.01	30.00		
50	10.09	11.64		
100	2.90	3.35		
150	1.33	1.54		
200	0.76	0.88		
300	0.35	0.40		

Revised 02-09-06

Explanatory Notes:

1 See Exhibit C1 and Figure 27 for segment locations, configuration of circuits in this segment and line loadings.

2 “Normal Peak Load” is defined as 100% of estimated peak, system normal configuration and “Normal Load” is defined as 80% of estimated peak, system in normal configuration.

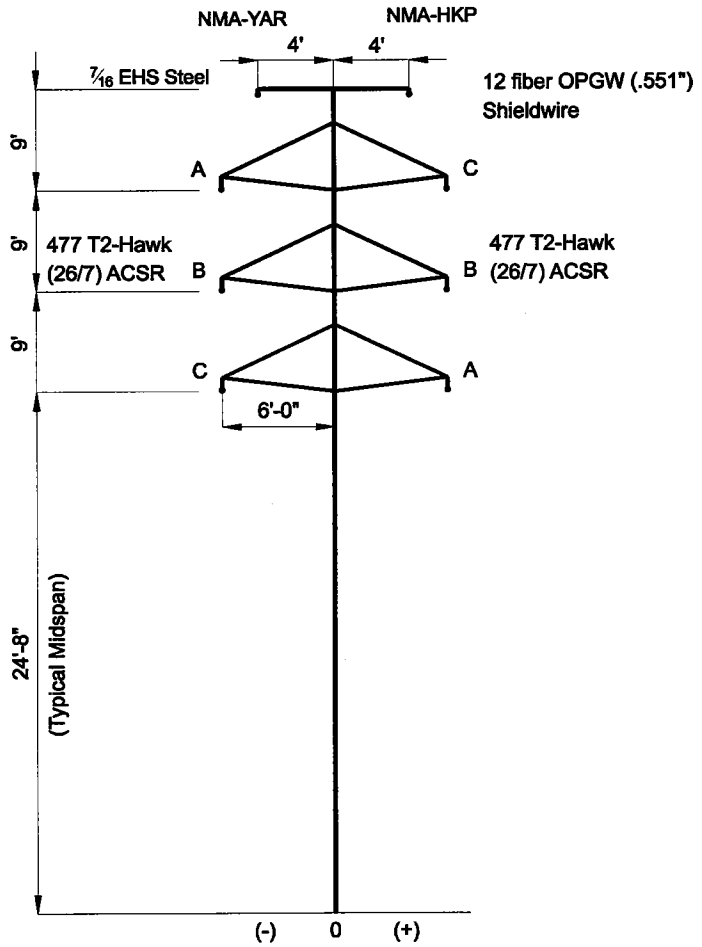
3 The magnetic field values shown represent the highest magnetic field RMS resultant at the specified distance from the centerline of the line as calculated by EPRI’s ACDCLINE program at a distance of one meter above ground.

TRANSMISSION
NMA - HKP 138 kV LINE (Right Side)
FLOW IS EAST

SEGMENT 1
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

TRANSMISSION
NMA-YAR 138 kV LINE (Left Side)
FLOW IS EAST

SEGMENT 1
2008 Normal Peak
I= 633 amps
Normal
I= 479 amps
2018 Normal Peak
I= 1351 amps
Normal
I= 1080 amps



LOOKING TOWARD HUISKAMP SUBSTATION
SEGMENT 1 - LOOKING EAST TOWARD WIBU ROAD

Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

TRANSMISSION CURRENT FLOW IS EAST AS LOOKING DIRECTION INDICATES

FIGURE 1

REVISION	02-08-06

SCALE

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NORTH MADISON - HUISKAMP

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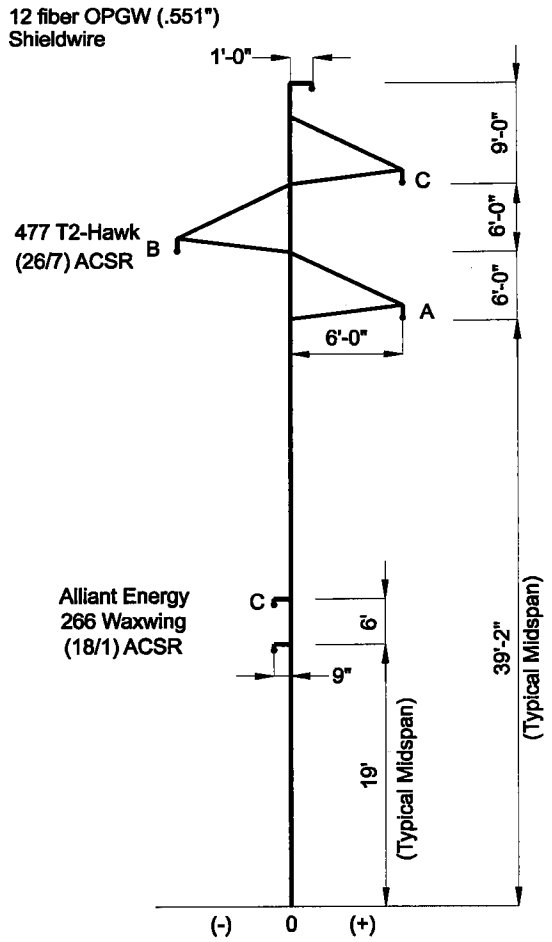
TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 56
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW SOUTH

SEGMENT 56
2008 Normal Peak
I= 6 amps
Normal
I= 5 amps
2018 Normal Peak
I= 12 amps
Normal
I= 10 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 56 - LOOKING SOUTH ALONG WEST SIDE OF WIBU ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 2

REVISION	02-08-06

SCALE

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -002

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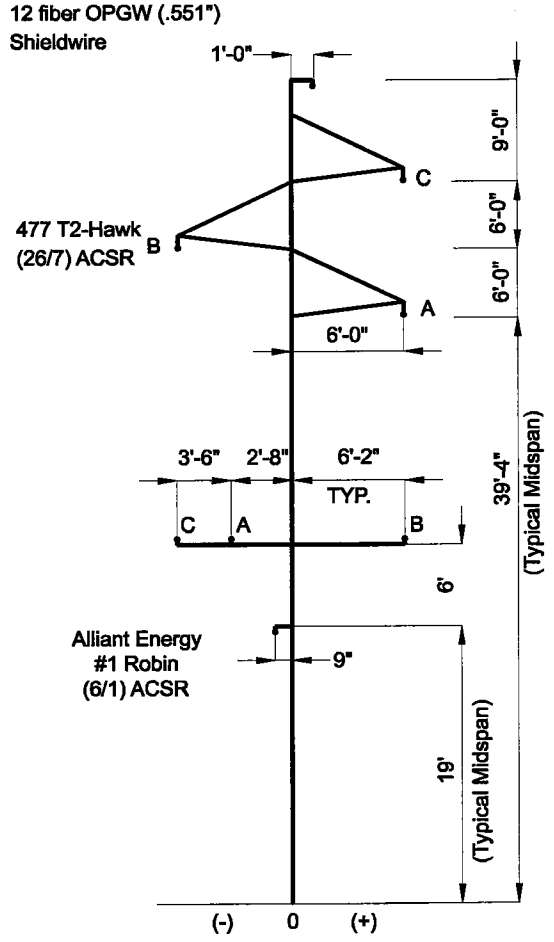
TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 47
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 3-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 47
2008 Normal Peak
I= 44 amps
Normal
I= 35 amps
2018 Normal Peak
I= 80 amps
Normal
I= 64 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 47 - LOOKING SOUTH ALONG THE WEST SIDE OF COUNTY HIGHWAY I FROM COUNTY HIGHWAY V TO NORWAY GROVE SCHOOL ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 3

REVISION	02-08-06

SCALE

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -003

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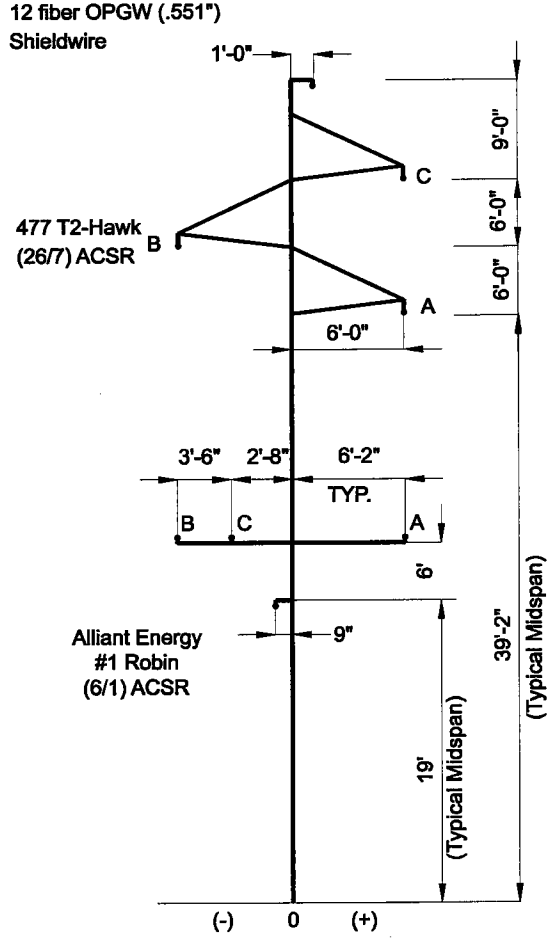
TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 49
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 3-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 49
2008 Normal Peak
I= 35 amps
Normal
I= 28 amps
2018 Normal Peak
I= 49 amps
Normal
I= 39 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 49 - LOOKING SOUTH ALONG THE EAST OR WEST SIDE OF COUNTY HIGHWAY I FROM NORWAY GROVE SCHOOL ROAD TO CUBA VALLEY ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 4

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SCALE

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GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -004

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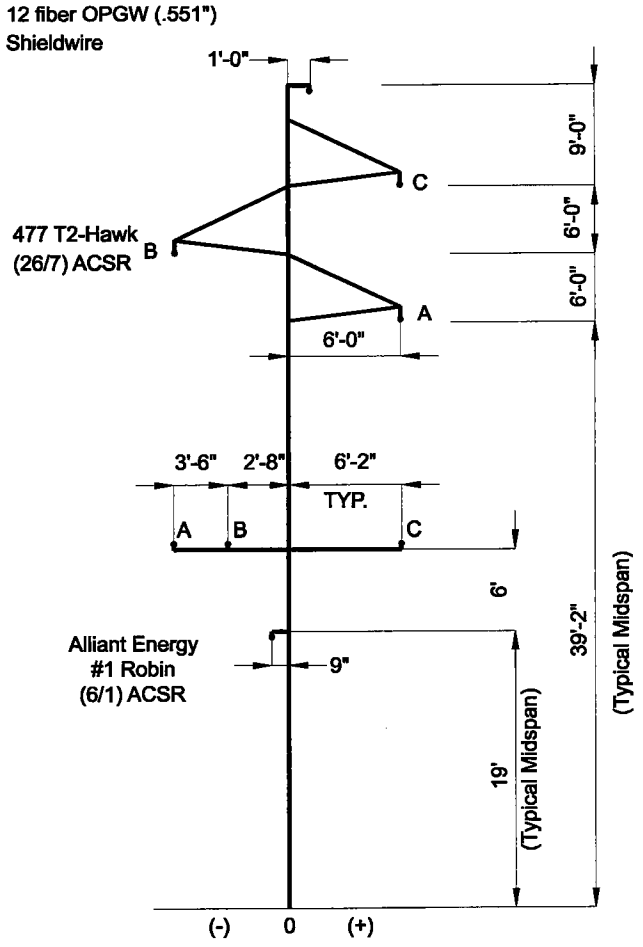
TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 58
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 3-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 58
2008 Normal Peak
I= 11 amps
Normal
I= 9 amps
2018 Normal Peak
I= 25 amps
Normal
I= 20 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 58 - LOOKING SOUTH ALONG THE WEST SIDE OF COUNTY HIGHWAY I FROM CUBA VALLEY ROAD TO EASY STREET

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 5

REVISION	02-08-06

SCALE

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -005

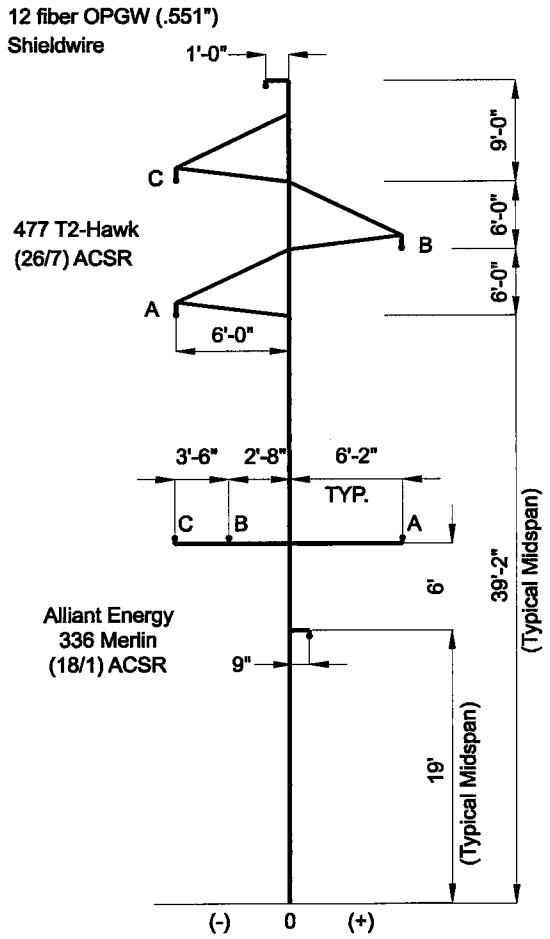
$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS WEST

SEGMENT 9
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 3-PHASE DISTRIBUTION
FLOW IS WEST

SEGMENT 9
2008 Normal Peak
I= 10 amps
Normal
I= 8 amps
2018 Normal Peak
I= 20 amps
Normal
I= 16 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 9 - LOOKING WEST ON SOUTH SIDE OF COUNTY HIGHWAY I (EASY STREET)

TRANSMISSION CURRENT FLOW IS WEST AS LOOKING DIRECTION INDICATES

FIGURE 6

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SCALE

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -006

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TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

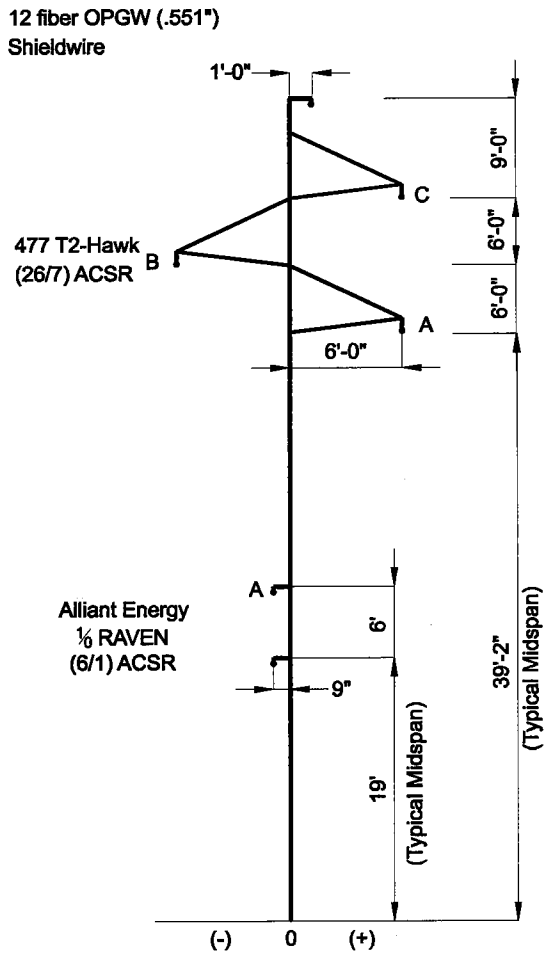
SEGMENT 14 & 26
2008 Normal Peak
I= 421 amps
Normal
I= 327amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 14
2008 Normal Peak
I= 3 amps
Normal
I= 2.5 amps
2018 Normal Peak
I= 6 amps
Normal
I= 5 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW IS NORTH

SEGMENT 26
2008 Normal Peak
I= 1 amps
Normal
I= 1 amps
2018 Normal Peak
I= 2 amps
Normal
I= 2 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 14 - LOOKING SOUTH ALONG EAST OR WEST SIDE OF COUNTY HIGHWAY I BETWEEN EASY STREET AND STATE HIGHWAY 19
SEGMENT 26 - LOOKING SOUTH ALONG EAST SIDE OF STATE HIGHWAY 113 TO BONG ROAD
TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 7

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SCALE

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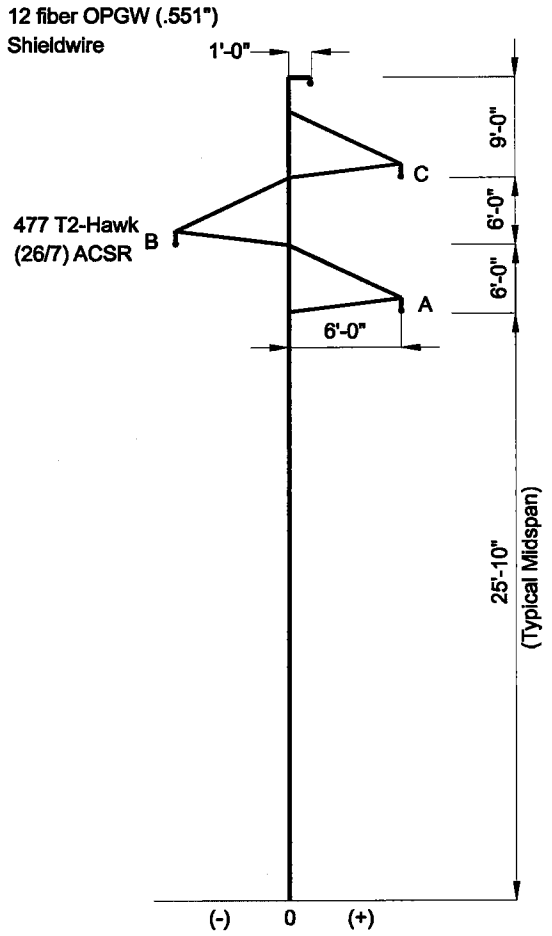
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -007

$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 32
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 32- LOOKING SOUTH ALONG THE EAST SIDE OF STATE HIGHWAY 113

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 8

REVISION	02-08-06

SCALE

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GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -008

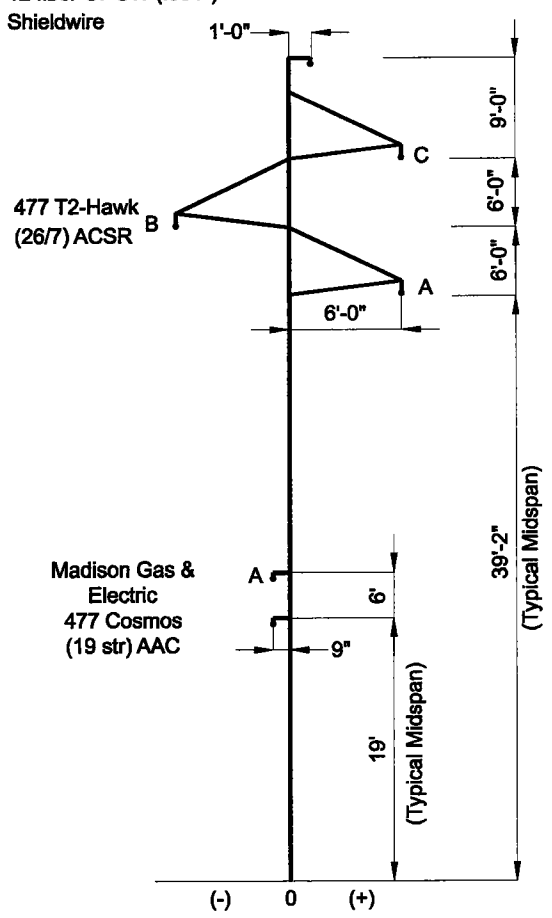
$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 61
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

MADISON GAS & ELECTRIC
13.8 kV 1-PHASE DISTRIBUTION
FLOW IS NORTH

SEGMENT 61
2008 Normal Peak
I= 3 amps
Normal
I= 3 amps
2018 Normal Peak
I= 4 amps
Normal
I= 3 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 61 - LOOKING SOUTH ALONG THE EAST SIDE OF STATE HIGHWAY 113

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 9

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SCALE

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 - 009

$sydtime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS WEST OR SOUTH

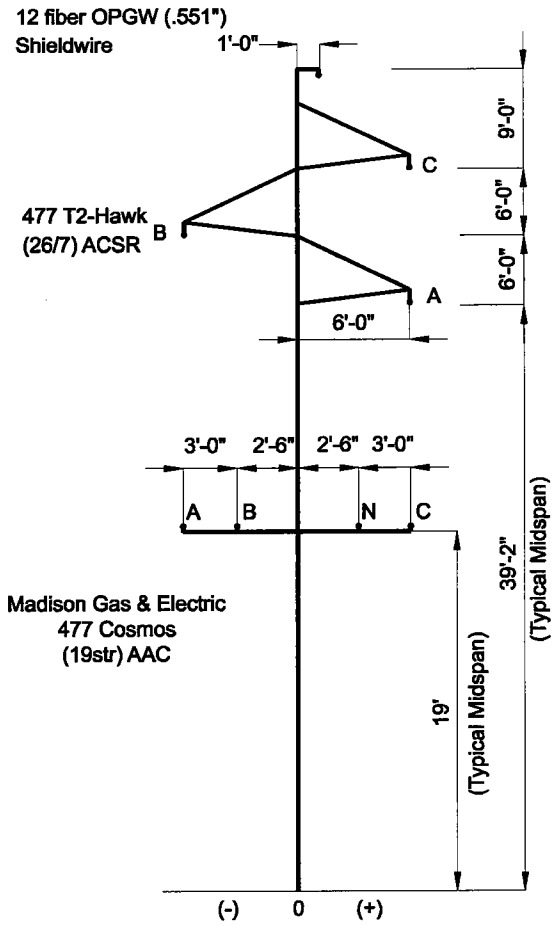
SEGMENT 35a & 35b
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

MADISON GAS & ELECTRIC
13.8 kV 3-PHASE DISTRIBUTION
FLOW IS NORTH

SEGMENT 35a
2008 Normal Peak
I= 22 amps
Normal
I= 18 amps
2018 Normal Peak
I= 26 amps
Normal
I= 21 amps

MADISON GAS & ELECTRIC
13.8 kV 3-PHASE DISTRIBUTION
FLOW IS EAST

SEGMENT 35b
2008 Normal Peak
I= 49 amps
Normal
I= 39 amps
2018 Normal Peak
I= 59 amps
Normal
I= 47 amps



LOOKING TOWARD HUISKAMP SUBSTATION

Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

SEGMENT 35a - LOOKING SOUTH ON EAST SIDE OF STATE HIGHWAY 113

SEGMENT 35b - LOOKING EAST ON RIVER ROAD TO Y132 LINE

TRANSMISSION CURRENT FLOW IS WEST OR SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 10

REVISION	02-08-06

SCALE

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -010

$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

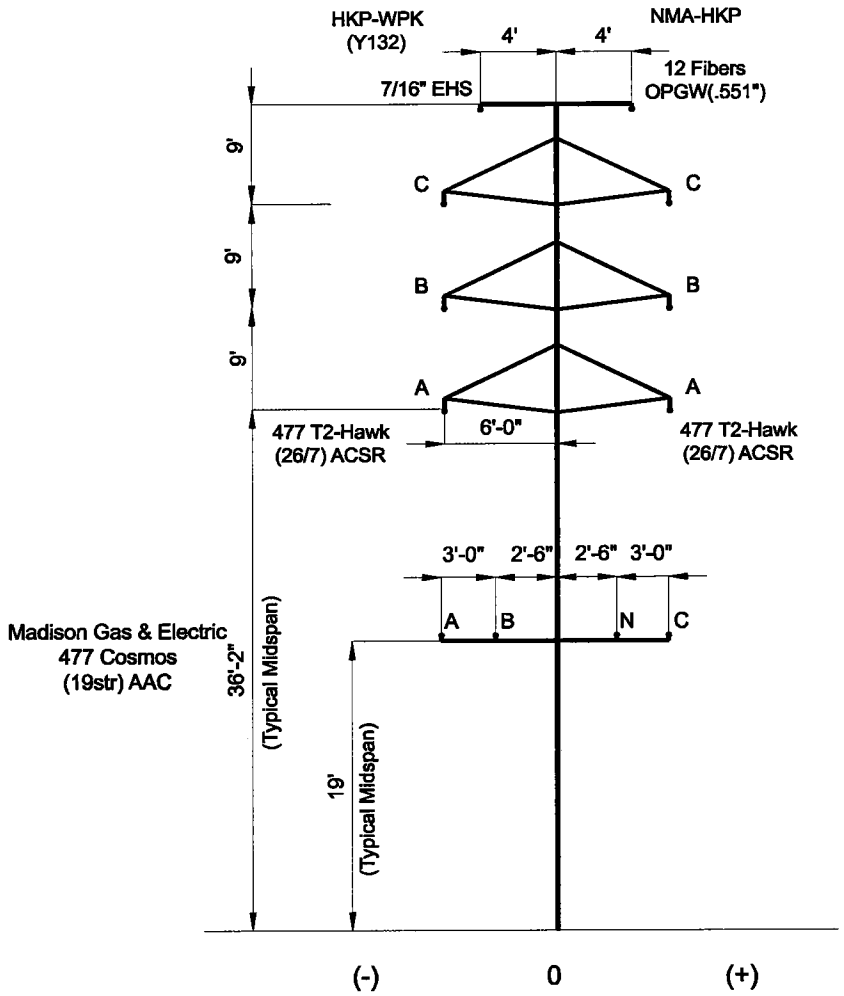
SEGMENT 36
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

TRANSMISSION
HKP-WPK (Y132) 69 kV LINE
FLOW IS NORTH

SEGMENT 36
2008 Normal Peak
I= 323 amps
Normal
I= 281 amps
2018 Normal Peak
I= 443 amps
Normal
I= 354 amps

MADISON GAS & ELECTRIC
13.8 kV 3-PHASE DISTRIBUTION
FLOW IS NORTH

SEGMENT 36
2008 Normal Peak
I= 49 amps
Normal
I= 40 amps
2018 Normal Peak
I= 59 amps
Normal
I= 48 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For Distribution conductors add 5 ft. for hieght at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

SEGMENTS 36- LOOKING SOUTHEAST ALONG THE SOUTH SIDE OF C&NW RAILROAD TRACKS TOWARD HUISKAMP SUBSTATION

FIGURE 11

REVISION	02-08-06

SCALE

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

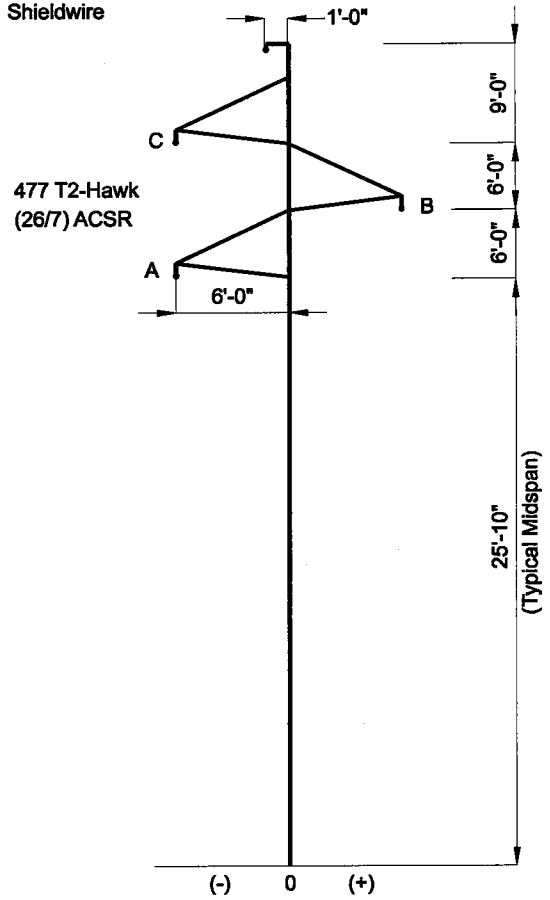
EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER-10- 000059 -011

$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS WEST

SEGMENT 2a
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 2a- LOOKING WEST TOWARD PATTON ROAD

TRANSMISSION CURRENT FLOW IS WEST AS LOOKING DIRECTION INDICATES

FIGURE 12

REVISION	02-08-06

SCALE

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -012

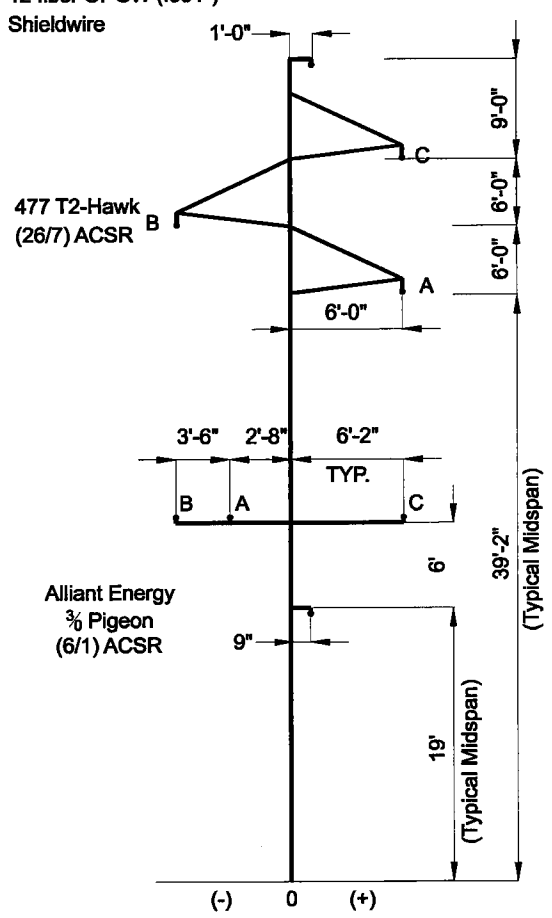
$sydtime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 2b
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.4 kV 3-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 2b
2008 Normal Peak
I= 183 amps
Normal
I= 146 amps
2018 Normal Peak
I= 235 amps
Normal
I= 188 amps



LOOKING TOWARD HUISKAMP SUBSTATION

Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

SEGMENT 2b- LOOKING SOUTH ALONG WEST SIDE OF PATTON ROAD
TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 13

REVISION	02-08-06

SCALE

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -013

$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

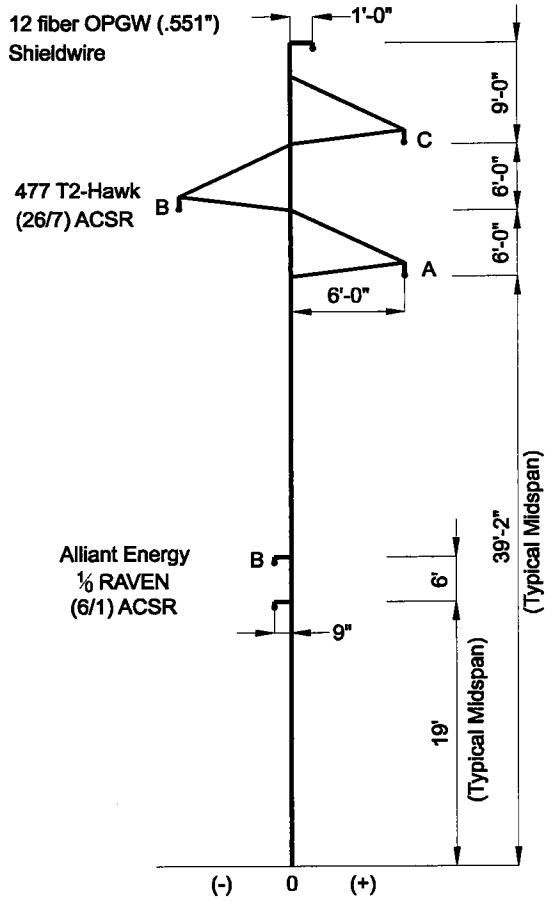
SEGMENT 3 & 43a-1
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 3
2008 Normal Peak
I= 12 amps
Normal
I= 10 amps
2018 Normal Peak
I= 20 amps
Normal
I= 16 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 43a-1
2008 Normal Peak
I= 5 amps
Normal
I= 4 amps
2018 Normal Peak
I= 7 amps
Normal
I= 6 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 3 - LOOKING SOUTH ALONG WESTSIDE OF PATTON ROAD
SEGMENT 43a-1 - LOOKING SOUTH ALONG WESTSIDE OF PATTON ROAD
TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 14

REVISION	02-08-06

SCALE

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THE ENERGY ACCESS COMPANY

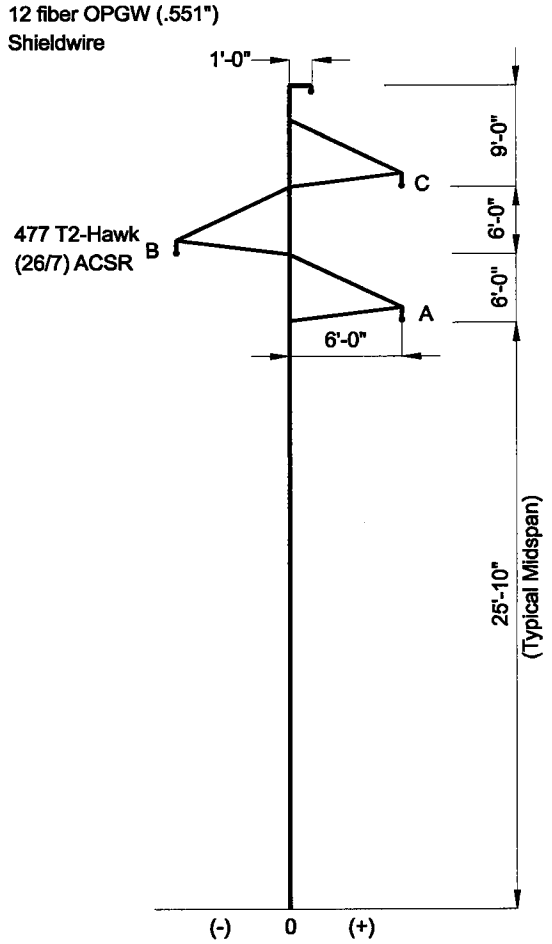
EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -014

$sydtime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 43a-2
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 43a -2 LOOKING SOUTH ALONG EAST SIDE OF PATTON ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 15

REVISION	02-08-06

SCALE

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -015

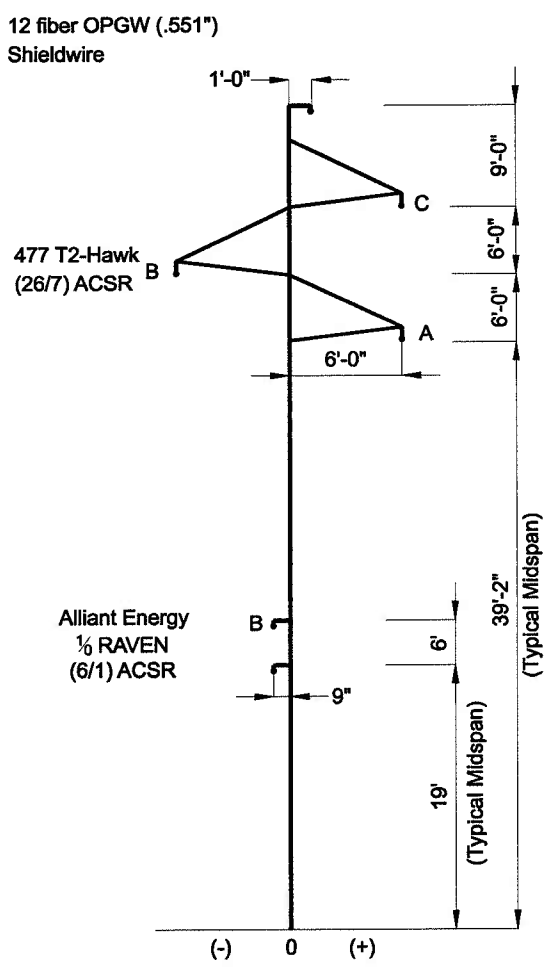
$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 43a-3
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW IS SOUTH

SEGMENT 43a-3
2008 Normal Peak
I= 1 amps
Normal
I= 1 amps
2018 Normal Peak
I= 2 amps
Normal
I= 2 amps



LOOKING TOWARD HUISKAMP SUBSTATION

Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

SEGMENT 43a-3 - LOOKING SOUTH ALONG WEST SIDE OF PATTON ROAD
TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 16

REVISION	02-08-06

SCALE

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

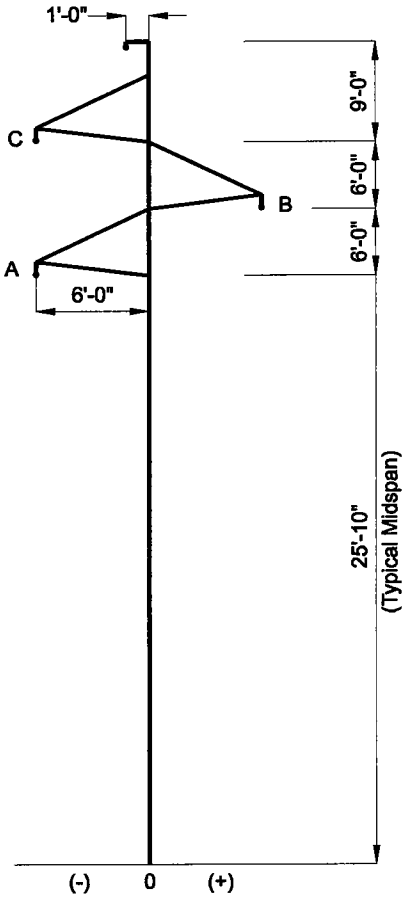
ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -016

$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS WEST

SEGMENT 45
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

12 fiber OPGW (.551")
Shieldwire



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 45 - LOOKING WEST ON SOUTH SIDE OF CUBA VALLEY ROAD TO SCHUMACHER ROAD

TRANSMISSION CURRENT FLOW IS WEST AS LOOKING DIRECTION INDICATES

FIGURE 17

REVISION	02-08-06

SCALE

NTS

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

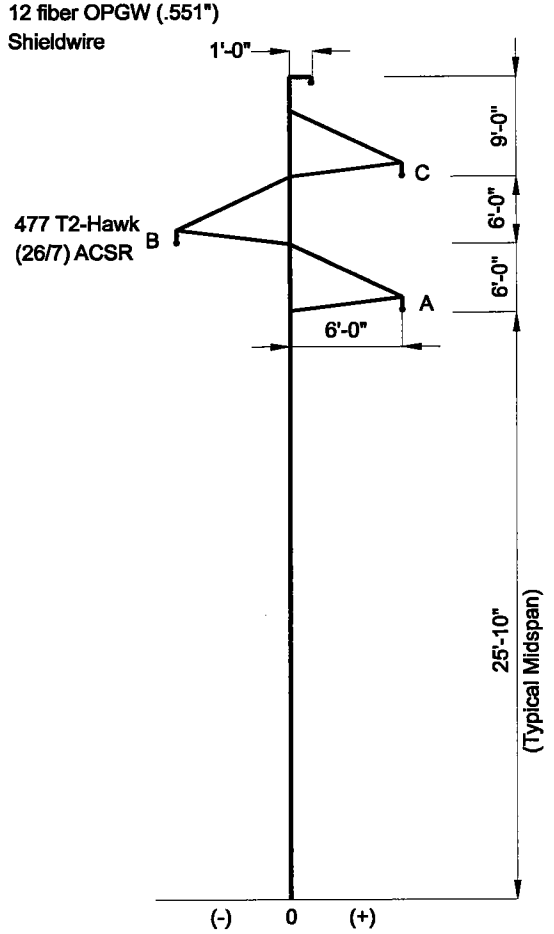
EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -017

$sydlme$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 8b-1
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 8b-1 - LOOKING SOUTH ON EAST SIDE OF SCHUMACHER ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 18

REVISION	02-08-06

SCALE

NTS

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -018

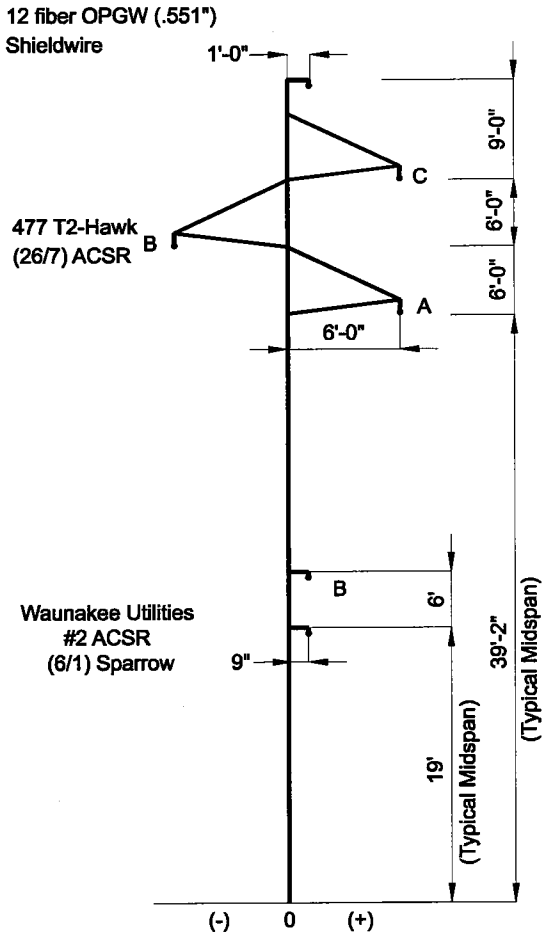
$sysfmes$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 8b-2
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

WAUNAKEE UTILITIES
7.2 kV 1-PHASE DISTRIBUTION
FLOW IS NORTH

SEGMENT 8b-2
2008 Normal Peak
I= 1 amps
Normal
I= 1 amps
2018 Normal Peak
I= 2 amps
Normal
I= 2 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 090 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 8b-2 - LOOKING SOUTH ON EAST SIDE OF SCHUMACHER ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 19

REVISION	02-08-06

SCALE

NTS

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -019

$sydime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

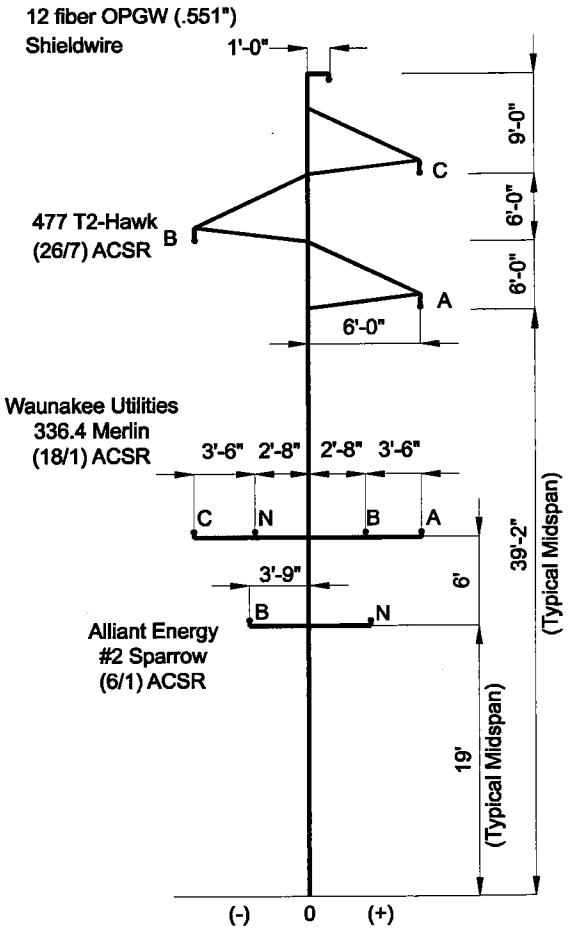
SEGMENT 13a
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

WAUNAKEE UTILLITIES
7.2 kV 3 PHASE DISTRIBUTION
FLOW SOUTH

SEGMENT 13a
2008 Normal Peak
I= 475 amps
Normal
I= 380 amps
2018 Normal Peak
I= 475 amps
Normal
I= 380 amps

ALLIANT ENERGY
12.47 kV 1-PHASE DISTRIBUTION
FLOW SOUTH

SEGMENT 13a
2008 Normal Peak
I= 3 amps
Normal
I= 3 amps
2018 Normal Peak
I= 6 amps
Normal
I= 5 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 13a - LOOKING SOUTH ALONG THE EAST SIDE OF SCHUMACHER ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 20

REVISION	02-08-06

SCALE

NTS

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER-10-000059-020

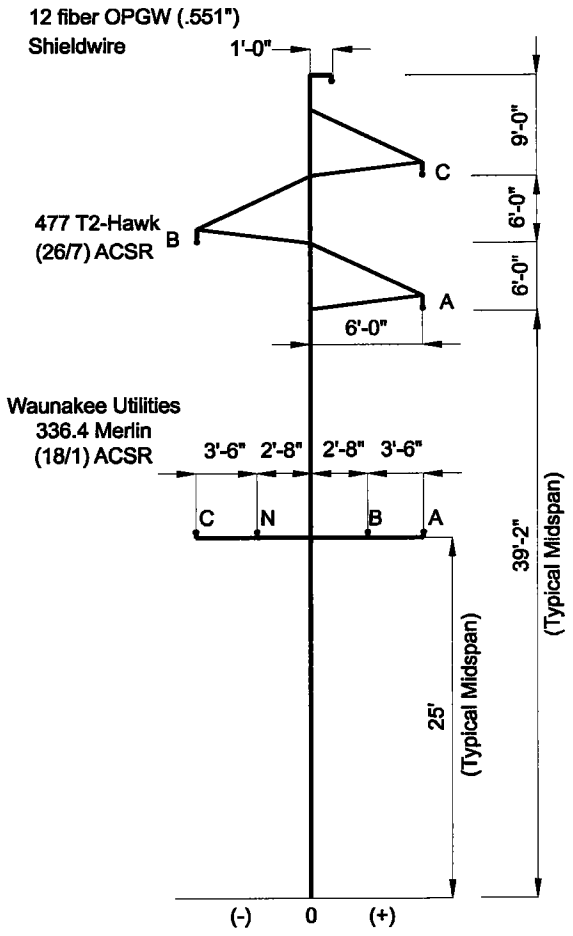
$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 13b
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

WAUNAKEE UTILLITIES
7.2 kV 3 PHASE DISTRIBUTION
FLOW SOUTH

SEGMENT 13b
2008 Normal Peak
I= 475 amps
Normal
I= 380 amps
2018 Normal Peak
I= 475 amps
Normal
I= 380 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Distribution conductors are supported by midspan structure.
4. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

DISTRIBUTION

KEY
A= 330 deg
B= 210 deg
C= 90 deg

LOOKING TOWARD HUISKAMP SUBSTATION

SEGMENT 13b - LOOKING SOUTH ALONG THE WEST SIDE OF SCHUMACHER ROAD

TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 21

REVISION	02-08-06

SCALE

NTS

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

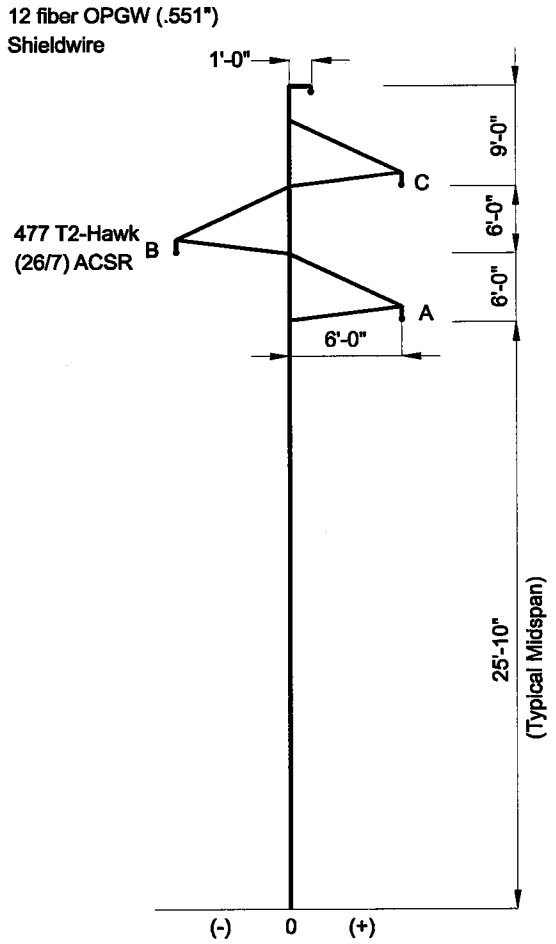
EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -021

$sydime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH OR WEST

SEGMENT 24
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole. For distribution conductors add 5 ft for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD HUISKAMP SUBSTATION
SEGMENT 24 - LOOKING SOUTH ALONG RAEMISCH ROAD TO UNIEK DRIVE THEN WEST 500 FT. THEN SOUTH TO POINT OF INTERSECTION WITH THE Y132 69kV LINE

TRANSMISSION CURRENT FLOW IS SOUTH OR WEST AS LOOKING DIRECTION INDICATES

FIGURE 22

REVISION	02-08-06

SCALE

NTS

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AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -022

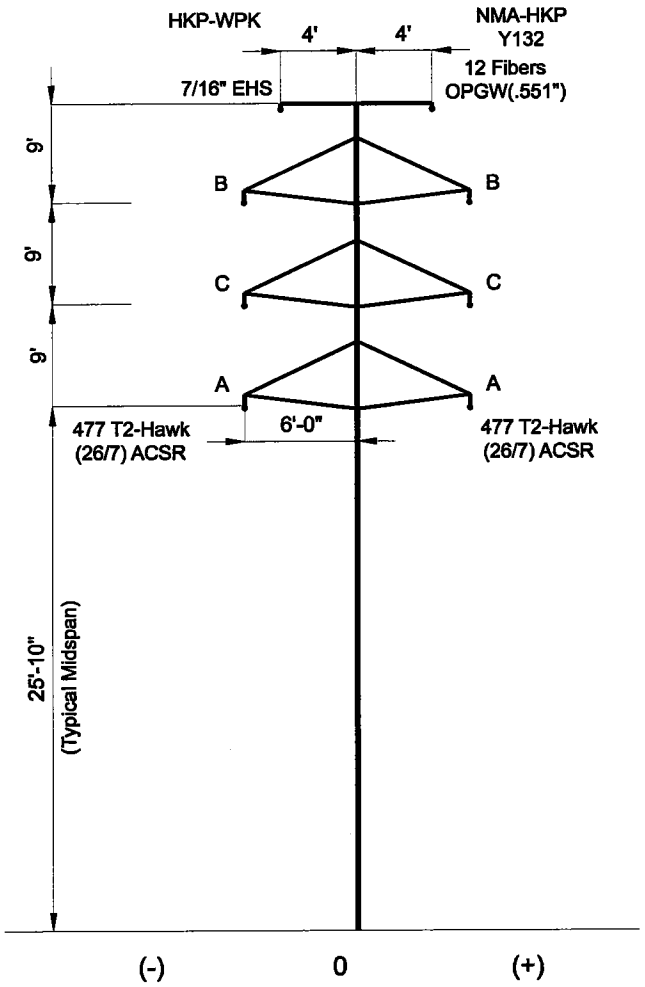
$sytime$

TRANSMISSION
NMA - HKP 138 kV LINE
FLOW IS SOUTH

SEGMENT 27, 31 & 34
2008 Normal Peak
I= 421 amps
Normal
I= 327 amps
2018 Normal Peak
I= 872 amps
Normal
I= 698 amps

TRANSMISSION
HKP - WPK 69 kV LINE
FLOW IS NORTH

SEGMENT 27, 31 & 34
2008 Normal Peak
I= 323 amps
Normal
I= 281 amps
2018 Normal Peak
I= 443 amps
Normal
I= 354 amps



Note:

1. Stated dimensions are at midspan, add 14'-4" ft. to the transmission conductor and Shieldwire dimensions for height at pole.
2. Transmission sags are based on 500 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

SEGMENTS 27, 31 & 34 LOOKING SOUTHEAST ALONG THE SOUTH SIDE OF THE C&NW RAILROAD TRACKS

NMA-HKP TRANSMISSION CURRENT FLOW IS SOUTH AS LOOKING DIRECTION INDICATES

FIGURE 23

REVISION	02-08-06

SCALE

NTS

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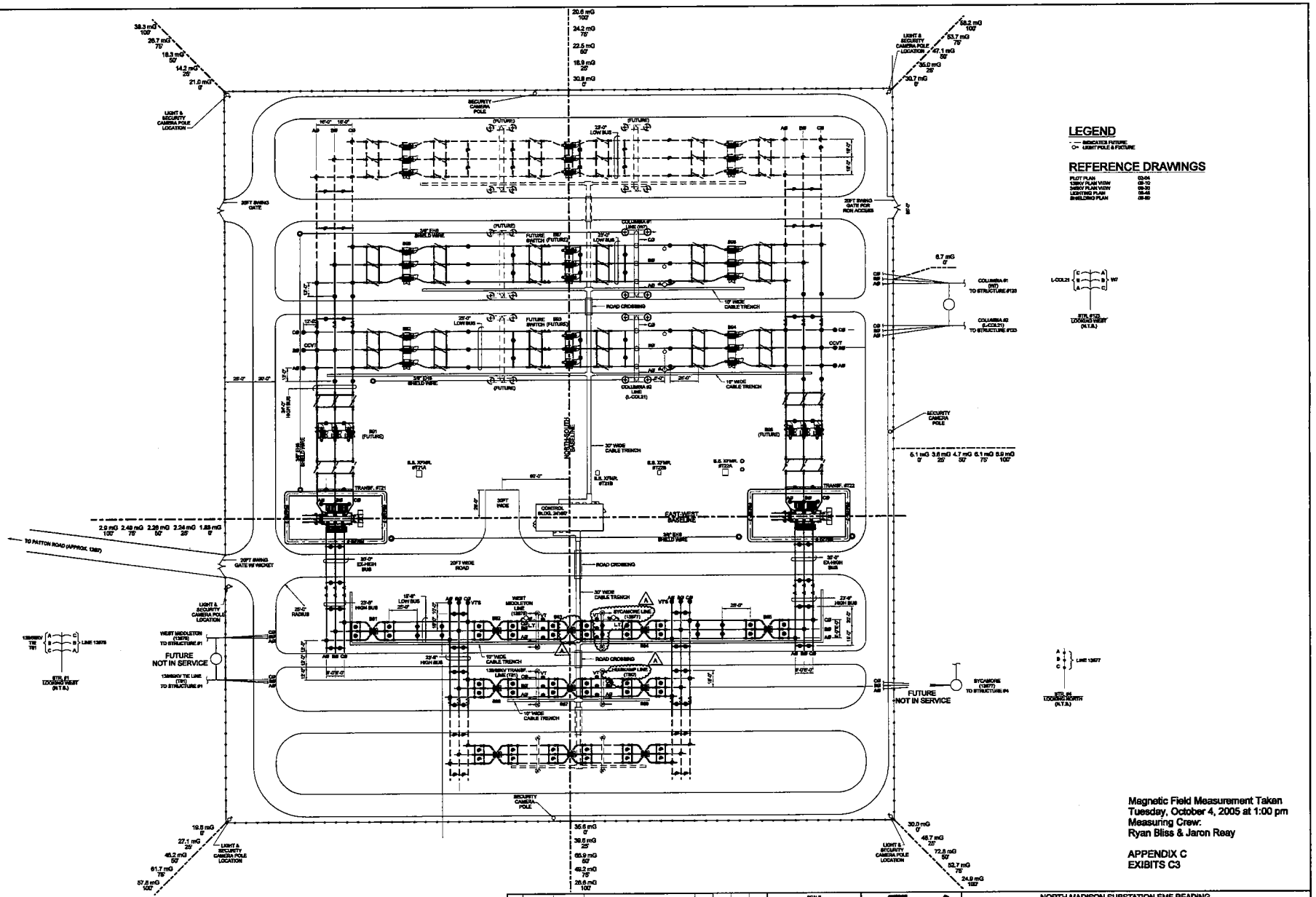
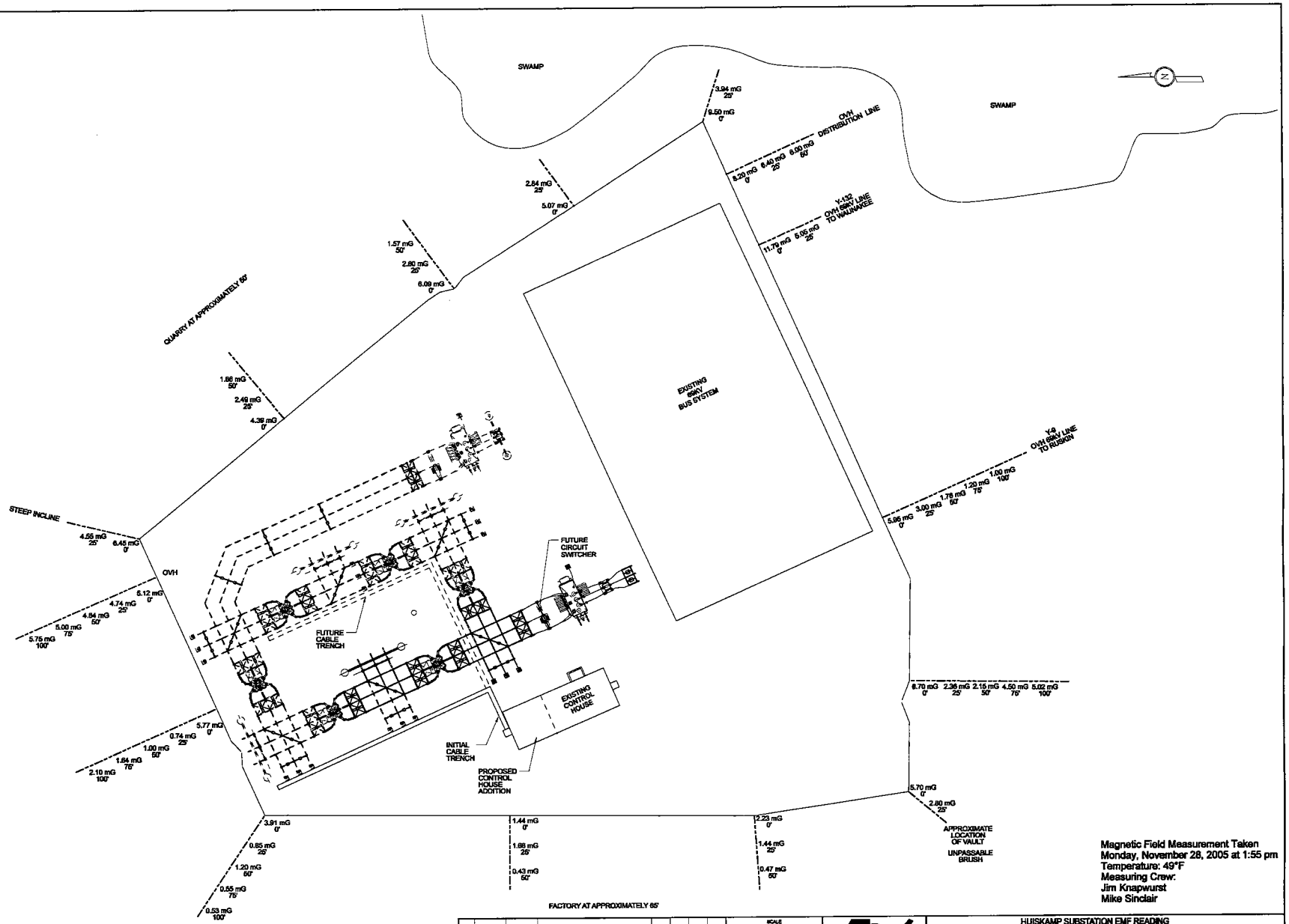
AMERICAN TRANSMISSION COMPANY
THE ENERGY ACCESS COMPANY

EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -023

$sydlme$


LEGEND
REFERENCE DRAWINGS
NORTH MADISON SUBSTATION EMF READING
GENERAL DRAWING
Magnetic Field Measurement Taken
Tuesday, October 4, 2005 at 1:00 pm
Measuring Crew:
Ryan Bliss & Jaron Reay
APPENDIX C
EXIBITS C3
ENGINEERING RECORD DRAWING NUMBER
ER - 10 - 000059 - 024
ADD NOTES
FUTURE
NOT IN SERVICE
SECURITY CAMERA POLE
LIGHT & SECURITY CAMERA POLE LOCATION
20FT SWING GATE
20FT SWING GATE W/ WICKET
20FT SWING GATE FOR IRON ACCESS
TO PATTON ROAD (APPROX. 1387)
EAST/WEST BASELINE
NORTH/SOUTH BASELINE
ROAD CROSSING
20FT WIDE ROAD
30FT WIDE
CONTROL BLDG. 24'x60'
37' WIDE CABLE TRENCH
19' WIDE CABLE TRENCH
WEST MIDDLETON (13675) TO STRUCTURE #1
SYCAMORE (13677) TO STRUCTURE #4
COLUMBIA #1 (W7) TO STRUCTURE #123
COLUMBIA #2 (L-COL21) TO STRUCTURE #123
COLUMBIA #3 LINE (L-COL31)
SYCAMORE LINE (13677)
WEST MIDDLETON LINE (13675)
LINE 13675
LINE 13677
138/69KV TIE 101
138/69KV TRANSF. LINE (T01)
69KV TIE LINE (T01) TO STRUCTURE #1
STR. #1 LOCUST WEST (N.T.S.)
STR. #2 LOCUST NORTH (N.T.S.)
STR. #123 LOCUST WEST (N.T.S.)
SCALE: 1" = 40'-0"
SCALE: NTS
1 11-8-05 ADD NOTES
REV DATE W.O. # DESCRIPTION DRWN CHK'D APP'D CMP'Y
AMERICAN TRANSMISSION COMPANY
THE ENERGY ADVISORS COMPANY
© AMERICAN TRANSMISSION COMPANY 2005
$sytime$



Magnetic Field Measurement Taken
Monday, November 28, 2005 at 1:55 pm
Temperature: 49°F
Measuring Crew:
Jim Knapwurst
Mike Sinclair

REV	DATE	W.O.#	DESCRIPTION	DRAWN	CHK'D	APP'D	COPY
1	11-8-05		ADD NOTES				

SCALE: NTS

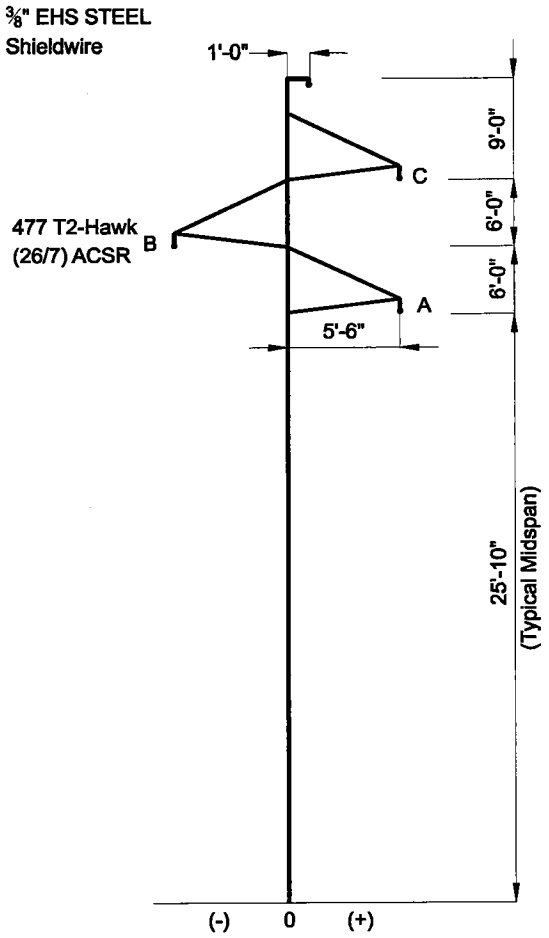
HUISKAMP SUBSTATION EMF READING
GENERAL DRAWING

ENGINEERING RECORD DRAWING NUMBER: ER - 10 - 000059 - 025

$eytime$

TRANSMISSION
NMA - YAR 138 kV LINE
FLOW IS EAST

SEGMENT 1
2008 Normal Peak
I= 633 amps
Normal
I= 479 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 138 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD YAHARA SUBSTATION

SEGMENT 1- LOOKING EAST TOWARD WIBU ROAD

TRANSMISSION CURRENT FLOW IS EAST AS LOOKING DIRECTION INDICATES

FIGURE 26

REVISION	02-08-06

SCALE

NTS

0

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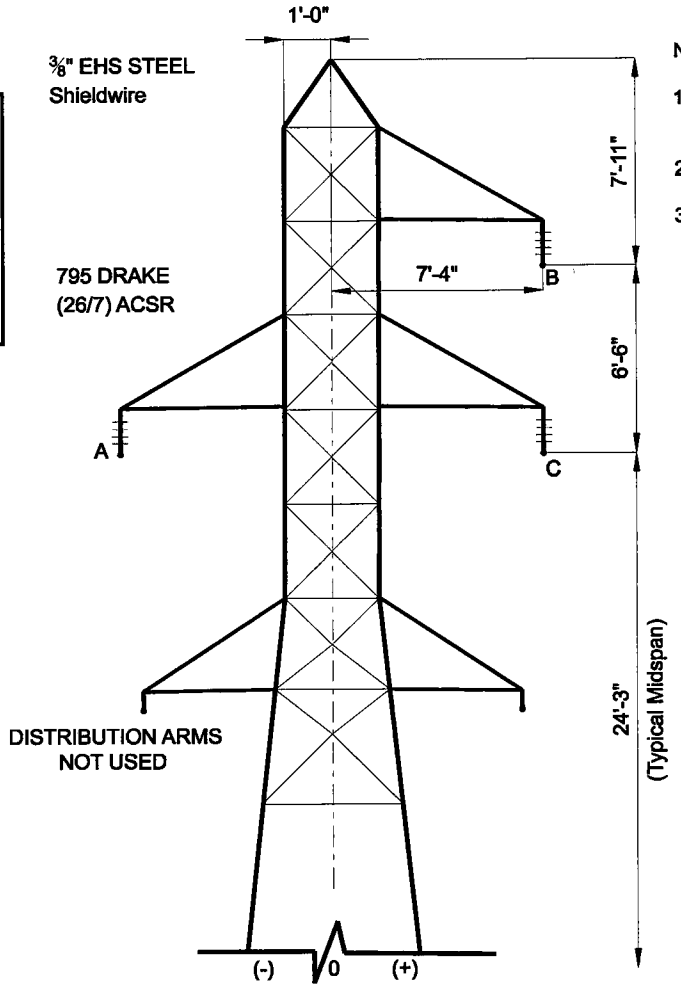
EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -026

$sytime$

TRANSMISSION
HKP - WPK 69 kV LINE
FLOW IS NORTH

SEGMENT 27, 31, 34 & 36
2008 Normal Peak
I= 323 amps
Normal
I= 281 amps



Note:

1. Stated dimensions are at midspan, add 18'-2" ft. to the transmission conductor and Shieldwire dimensions for height at pole.
2. Transmission sags are based on 600 ft ruling span.
3. Transmission energized at 69 kV in 2008.

TRANSMISSION

KEY
A= 0 deg
B= 240 deg
C= 120 deg

LOOKING TOWARD YAHARA SUBSTATION

SEGMENT 27, 31, 34 & 36 LOOKING SOUTH EAST ALONG SOUTH SIDE OF C&NW RAILROAD TRACKS TOWARD HUISKAMP SUBSTATION

TRANSMISSION CURRENT FLOW IS NORTH AS LOOKING DIRECTION INDICATES

FIGURE 27

REVISION	02-08-06

SCALE

NTS

0

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EMF FIGURES
GENERAL DRAWINGS
NORTH MADISON - HUISKAMP

ENGINEERING RECORD DRAWING No. ER - 10 - 000059 -027

$sytime$